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THE GEOLOGICAL AND FAUNAL RELATIONS OF EUROPE AND AMERICA DURING THE TERTIARY PERIOD AND THE THEORY OF THE SUCCESSIVE INVASIONS OF AN AFRICAN FAUNA.*

SEVERAL years ago the discovery of some new types of Rhinoceroses in this country directed my attention afresh to the study of the Tertiary fauna of Europe as parallel with that of America. In the succession of European and American types it appeared that there were most interesting similarities between rhinoceroses as widely separated as the present regions of Colorado and Southern France, but upon attempting more than a general comparison I was confronted by a lack of definite time scale between the levels in which these animals occur. The available correlations by Cope, Filhol, Scott, Zittel and others proved too indefinite at certain points. This difficulty became so obstructive that a more exact correlation of European and American horizons appeared to be an essential basis not only for the phylogeny of the Rhinoceroses but for that of other types of mammals of Europe and North America.

STRATIGRAPHICAL CORRELATION.

In an address before the Academy last year the various steps which have been taken to secure such correlation were described. The work proves to be a very diffi-

*Address of retiring President, New York Academy of Sciences, February 26, 1900.